



European Polyurethane Industry Facts 2018

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2nd Edition

Socio-economic contribution of the
polyurethane industry to growth and jobs
in Europe.



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About

Polyurethanes are part of modern everyday life. No matter the form, be that flexible or rigid foams, elastomers or various others, no matter the application. Polyurethane based products ease everyday life and perform, often not even noticed by the consumer, reliable and cost efficient.

This report highlights the key role, the polyurethane industry plays in the European economy, involving close to **244,000 companies** throughout Europe and contributing **€255 billion** annually to the European economy. It also relates, directly and indirectly, to more than **5.1 million jobs** throughout the European Union. Behind these figures stands a notable compound annual growth (CAGR) of the polyurethane industry in Europe of 4.3 % since 2013/2014.

The data contained in this report has been compiled by the independent consulting company Conversio Market & Strategy GmbH, picturing the situation for 2018, based on the most recent data available. It ties in with ISOPA's preceding report, published in April 2014, while expanding the focus in relevant areas.

Polyols, aromatic and aliphatic isocyanates: the building blocks of polyurethanes

ALIPA

ALIPA, the European Aliphatic Isocyanates Producers Association, has been founded by the major European producers of aliphatic isocyanates and polyisocyanates. Aliphatic isocyanates are important basic materials and components for high-quality protective and decorative coating systems for modern adhesive systems and for specialties like elastomers.

ISOPA

ISOPA is the European trade association for producers of diisocyanates and polyols – the main components of polyurethanes. ISOPA promotes the highest standards of best practice in the distribution and use of diisocyanates and polyols in Europe and ensures that all stakeholders can easily access accurate and up-to-date information on these substances.

ALIPA

The ALIPA logo is centered at the top in orange. Below it, within an orange rounded rectangle, are four member logos: BASF (with tagline 'We create chemistry'), Evonik (with tagline 'POWER TO CREATE'), Vencorex chemicals, and Covestro (with a rainbow circular graphic).

ISOPA

The ISOPA logo is centered at the top in blue. Below it, within a blue rounded rectangle, are six member logos: BASF (with tagline 'We create chemistry'), Covestro (with a rainbow circular graphic), Dow (in a red diamond), BorsodChem (with tagline 'Chemistry for generations'), Shell Chemicals (with the Shell logo), and Huntsman (with tagline 'Enriching lives through innovation').

Summary

As is evident from the variety of its uses, the polyurethane sector is not limited to the sole producers of the chemical compound: their direct customers, the final producers of polyurethane-based products and the producers of the end-products; which include the various forms of polyurethanes, must be considered, too.

360,000 employees directly contribute in terms of polyurethane production, including direct and downstream customers and their suppliers and subcontractors. In addition to those, close to **4.7 million jobs**, related to polyurethane products and their application are found in the non-polyurethane sector. Therefore, in this report, an overview of the economic and social value of polyurethanes taken as a whole, is presented.

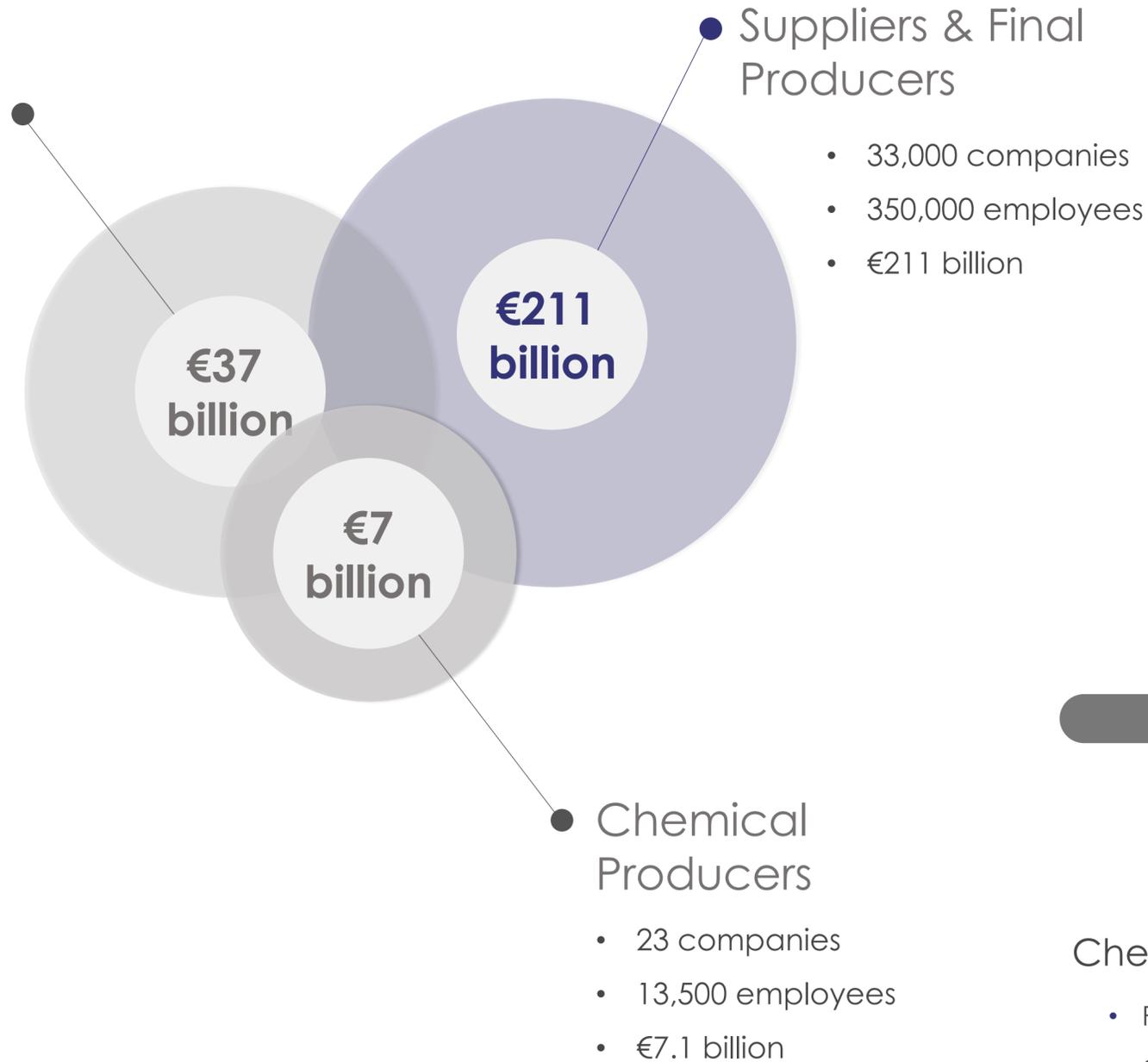
The polyurethane industry generates a substantial contribution to European wealth and job creation. Close to **245,000 companies** throughout Europe are creating a **value of €255 billion** every year. The production and use of polyurethane application ensures the **employment of more than 5.1 million people** throughout the European Union.

All figures rounded.

Summary

Non-PU Sectors

- 4,760,000 employees
- 212,000 companies
- €37 billion



• Creating PU components and final products

Components, Suppliers & Final Producers



Chemical Producers

- Providing basic chemicals and additives for PU production

Non-PU Sectors

- Working with PU products

All figures rounded. Overview figures include Russia and Turkey.

Values by Region



Total economic and employment contribution

	Employment (units)	Number of companies (units)	Economic contribution (billion euros)
Germany	808,000	43,000	54.09
France	609,000	19,000	22.31
Spain	548,000	19,000	17.37
UK	460,000	17,000	21.78
Italy	650,000	32,000	32.41
Netherlands	217,000	9,000	17.72
Poland	360,000	15,000	21.78
Other (EU27, Norway, Switzerland, Russia, Turkey)	1,050,000	90,000	67.56
Total	5,110,000	244,000	255.00

All figures rounded.

Values by Region



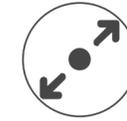
Direct contribution in terms of jobs and number of companies

(Polyurethane direct production, including direct and downstream customers and their suppliers/Subcontractors)

	Employment (units)	Number of companies (units)
Germany	63,000	4,200
France	22,000	1,500
Spain	28,000	1,800
UK	21,000	1,600
Italy	39,000	3,300
Netherlands	12,000	800
Poland	24,000	1,400
Other (EU27, Norway, Switzerland, Russia, Turkey)	141,000	18,500
Total	350,000	33,100

All figures rounded.

Values by Region



Indirect contribution in terms of jobs and number of companies
(non-polyurethane sector*)

	Employment (units)	Number of companies (units)
Germany	745,000	39,000
France	587,000	18,000
Spain	520,000	17,000
UK	440,000	15,000
Italy	612,000	29,000
Netherlands	205,000	8,000
Poland	335,000	14,000
Other (EU27, Norway, Switzerland, Russia, Turkey)	925,000	72,000
Total	4,760,000	212,000

All figures rounded.

*e.g. Employees of construction companies, working with PU based products.

Values by Region

Germany

In total, close to **43,000** German companies with more than **808,000** employees add to the total economic contribution. This includes **4,200** enterprises directly involved as producers and direct- or downstream customers of polyurethane products. Additional **745,000** companies from the non-polyurethane sector indirectly contribute to the total value creation of **€54.1 billion**.

France

Across all applications, **1,500** enterprises employing **22,000** people directly create or supply polyurethane products in France. Together with related players from the non-polyurethane sector, **19,000** companies provide **609,000** jobs and account for an economic contribution of **€22.3 billion**.

Spain

When looking at the total contribution, **548,000** companies are involved. **1,800** of them in the immediate production of polyurethanes or its applications, functioning as their suppliers or subcontractors. All in all, they generate an economic contribution of **€17.4 billion**.

United Kingdom

A glance on the total contribution in terms of jobs and wealth creation illustrates the relevance of the United Kingdom's polyurethane industry. **460,000** people in **17,000** companies, with **21,000** jobs in direct relation in terms of polyurethane production and products, contribute to a wealth creation of **€21.7 billion**.

Italy

Across all applications, **650,000** Italian companies with close to **130,000** employees add to the economic success of the polyurethane sector in Italy. This includes **3,300** companies with direct contribution in terms of production or customers of polyurethane products. The total value creation levels around **€32.4 billion** and accounts for 13 % of the total European contribution.

Netherlands

In the Netherlands, **800** companies directly contribute, and **8,000** enterprises indirectly contribute to the production and application of polyurethane based products. They allocate close to **217,000** jobs and create an economic contribution of **€17.7 billion**.

All figures rounded.

Values by Region

Poland

Taken all applications of polyurethanes into account, **15,000** Polish enterprises take part in the value creation of **€21.7 billion** and create employment for more than **360,000** people. Of those, **1,400** companies with **24,000** employees directly contribute in terms of production or supplying polyurethane products.

Russia

In terms of total contribution, an economic value of **€10.5 billion** was created from the polyurethane industry and its suppliers and subcontractors. **8,000** companies provide employment to **187,000** Russians throughout all sectors.

Turkey

In total, more than **221,000** Turkish jobs are directly related to polyurethane applications and **1,200** companies produce or supply polyurethane products. All together with enterprises contributing indirectly to the value creation, an economic value of **€ 22.5 billion** is created.

All figures rounded.

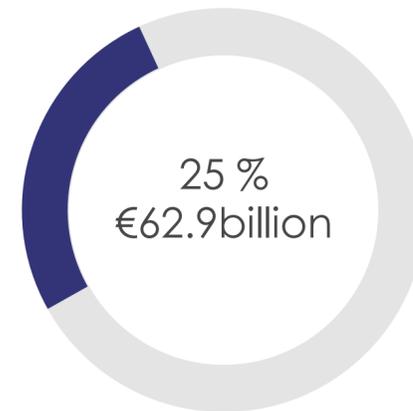
Value created on application level

- Consumer goods
- Finished PU components



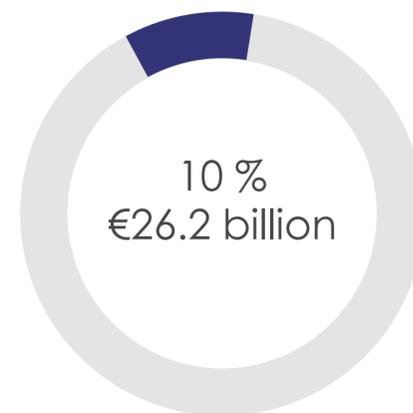
Value created on component level

- Component parts
- Semi-finished products
- Basic products for consumer goods



Value created on chemical market & distributor level

- Chemical components
- others



Value by Sector

Appliances

Polyurethane rigid foam is an excellent insulator, which prevents unwanted movement of hot or cold air. In connection with its extremely lightweight and durable characteristics, it is the ideal material for insulation of cold appliances. Thus, almost all refrigerators and freezers produced in the world are insulated with polyurethane foam, where it preserves food at all stages of conservation and consumption in domestic kitchens.

- Total employment: 83,000
- Companies involved: 11,750
- Value added: €15.05 billion

Automotive

Used in flexible foams in car seats, headrests and other components in the passenger cabin, polyurethanes not only make traveling more convenient but also greatly reduce the risk of injury in case of collision. Used for sound insulation, polyurethanes dampen vehicle noises by more than 50 % compared to traditional materials. Polyurethanes also cut down vibration, providing for a more pleasant and less tiring drive.

- Total employment: 222,000
- Companies involved: 20,100
- Value added: €27.36 billion

Construction

Construction applications have the biggest share in European demand for polyurethane products. It is widely used for construction in all types of infrastructure projects. However, its most significant role within this sector is building insulation. Whether rigid foams in sandwich elements for new constructions, insulation blocks or spray foam for energetic modernization, polyurethane foams are the key to modern energy management.

- Total employment: 3.8 million
- Companies involved: 70,250
- Value added: €59.34 billion

All figures rounded.

Value by Sector

Footwear

Less known, but not less significant is the value of polyurethane elastomers for the construction of modern footwear. Good shoes are comfortable, long-lasting, appropriate for usage –and sold at the right price. Polyurethanes help to meet all those targets. Polyurethane elastomers are used to create soles with perfect shock absorbing capabilities and therefore are ideal for hard-wearing shoe soles.

- Total employment: 98,000
- Companies involved: 13,000
- Value added: €0.68 billion

Furniture & Bedding

One of the probably best-known applications for polyurethane foams is to be found in most of Europeans homes. Modern homes, offices and communal buildings would be far less comfortable without polyurethanes. Flexible foams are soft yet provide support, durable and keep their shape. They are the most common upholstery material for seating cushions in all types of upholstered furniture and build the core of most mattresses.

- Total employment: 335,000
- Companies involved: 29,200
- Value added: €31.54 billion

Industrial Goods

Favorable isolating characteristics of both rigid and flexible polyurethane foams make them a preferred material for insulation of technical systems and piping. Polyurethane sealants are used to fill gaps thereby preventing air and water leakage. They are also used in conjunction with inorganic insulation, such as rockwool or ceramic fibers, for firestopping and to counteract smoke and hose-stream passage.

- Total employment: 200,000
- Companies involved: 17,500
- Value added: €34.87 billion

All figures rounded.

Value by Type

Flexible Foams

Flexible polyurethane foam affects our lives in many ways and new applications are introduced on a regular basis. It is used as cushioning for a wide variety of consumer and commercial products including furniture and bedding, carpet cushion, transportation, packaging and in other textiles. For its insulating features, it is also utilized for acoustic and thermic insulation.

- Total employment: 50,200
- Companies involved: 7,700
- Value added: €20.67 billion

Rigid Foams

Available in various densities are polyurethane rigid foams. Rigid foams can be, just like flexible foams, produced in blocks and subsequently trimmed for final purposes. They are utilized for insulation but also other manifold applications, such as floating devices for example. Also available in aerosol cans, they can be applied directly for construction purposes.

- Total employment: 36,000
- Companies involved: 7,200
- Value added: €20.24 billion

Elastomers

Elastomers are viscoelastic, thermoset polymers. Polyurethane elastomers are used in a wide range of applications. Most of these are found in the engineering field, thanks to their properties of durability, abrasion resistance and chemical and oil resistance. Also, they play a decisive role for the creation of footwear, mainly for soles, or leisure applications. For example, when processed to roles for rollerblades.

- Total employment: 85,000
- Companies involved: 3,700
- Value added: €5.59 billion

All figures rounded.

Value by Type

Adhesives & Sealants

Polyurethane glues are strong and resilient, which makes them the perfect product for construction projects, as well as for packaging and exterior furniture. Polyurethanes adhesives can help produce new, useful applications from used materials. Sealants prevent liquids from entering or escaping through gaps and crevices, which is why polyurethanes are used, for example, in harsh climatic conditions to protect windows.

- Total employment: 8,200
- Companies involved: 3,700
- Value added: €4.82 billion

Coatings, Paint & Varnish

Coatings protect the exposed surfaces of many different products, making them last longer and look better. Due to their resilience and durability, polyurethane is an ideal choice for this type of application. Polyurethane coatings are one of the most essential applications for aliphatic based polyurethanes.

- Total employment: 10,600
- Companies involved: 4,000
- Value added: €11.93 billion

All figures rounded.

Glossary

Total contribution

The total quantitative contribution in terms of job or value creation along all stages of the value chain.

Direct contribution

Values created due to production of chemicals for polyurethanes or the manufacturing of PU based products.

Indirect contribution

Values created by the application of PU based products, considering the statistical share of concerned employees and value creation, delimited from total operations.

Sector/Application

Classification by branch or field PU based products are utilized for. A PU flexible foam, utilized to produce a mattress is categorized within Furniture & Bedding

Type

Classification by the output form of polyurethanes. The type does not consider the basic materials, PU products are made of, but distinguishes the different classes of PU based components, such as flexible foams, elastomers, etc.

Chemical producers

Companies of the chemical industry, providing basic materials for the production of polyurethanes.

Suppliers & Final Producers

Enterprises manufacturing intermediate products (e.g. PU foam blocks) or final PU based applications (e.g. PU mattresses).

Non-PU Sectors

Businesses utilizing PU based products for their value creation while not ranking amongst chemical or plastics producers. E.g. façade engineers utilizing PU building foam.

The information contained in this publication has been compiled by Conversio Market & Strategy GmbH (<http://www.conversio-gmbh.com>) based on data from 2017-2019. Presented data is based on an integrated approach, incorporating value and structure of the preceding report, current economic statistics and Conversio's internal databases. It is, to the best of our knowledge, true and accurate, but any recommendation or suggestions which may be made are without guarantee, since the conditions of use and the composition of source materials are beyond our control. Furthermore, nothing contained herein shall be construed as a recommendation to use any product in conflict with existing patents covering any material or its use.

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